

REMARKS

Reconsideration and allowance of the subject application are respectfully requested. By this Amendment, Applicant has canceled claim 2 without prejudice or disclaimer. Thus, claims 1 and 3-31 are now pending in the application. In response to the Office Action (Paper No. 6), Applicant respectfully submits the pending claims define patentable subject matter.

I. Preliminary Matters

Applicant respectfully requests that the Examiner indicate approval of the formal drawings submitted October 11, 2002 in the next action.

The title of the invention is objected to because the Examiner asserts that the title is not descriptive of the invention to which the claims are directed. By this Amendment, Applicant has amended the title to be more descriptive. Accordingly, the Examiner is requested to remove the objection to the title.

II. Prior Art Rejections

A. Disclosure of Coleman

Coleman (U.S. Patent No. 6,052,502) discloses a fiber optic cable having ribbon stacks and an ample tensile window, whereby excessive strain on the ribbon stacks is minimized or avoided.

As shown in Figures 1-4, a fiber optic cable 10 includes a crush-resistant slotted rod having a plurality of helical or SZ-shaped grooves 22. Buffer tubes 13 are disposed in respective grooves 22 and a water blocking material 16 comprising a water blocking powder, gel, or jelly

surrounds the buffer tubes 13 within the grooves 22. Each buffer tube 13 surrounds a respective fiber optic ribbon stack 14 supported by a water blocking material 15 disposed in the buffer tube 13. The water blocking material 15 may be a thixotropic material, for example, a silicone gel material or a petroleum-based material, or a dry water blocking material comprising a tape or yarn (not shown). The water blocking material 15 has a mechanical stiffness or viscous consistency which supports ribbon stack 14 in a tensile window position P1 (FIG. 3) inside the buffer tube 13, but which permits movement of ribbon stack 14 when the cable 10 is subjected to tension.

When in the tensile window position P1, the ribbon stack 14 may be generally circumscribed by the water blocking material 15 and is not in contact with buffer tube 13. The position of the ribbon stack 14 may be medial with respect to the buffer tube 13, or the ribbon stack 14 may be disposed off-center with respect to a center of buffer tube 13; in any event, however, sufficient water blocking material 15 exists about the ribbon stack 14 to support the ribbon stack initially in the unstressed tensile window position P1 so that ribbon stack 14 has room to move radially inwardly toward the center of the cable 10.

When the cable 10 experiences tension, the ribbon stack 14 will move radially from the tensile window position P1 to a position P2 (FIG. 4) closer to a surface of the buffer tube 13 and is generally closer to the center of cable 10. As this occurs, the water blocking material 15 flows around the ribbon stack 14. Alternatively, in the event a dry water blocking material is used to support ribbon stack 14, preferably the hydrophilic materials and substrate, would be crushed or compressed thereby allowing stack 14 to move. In either event, ribbon stack 14 undergoes

tensile window movement unrestrained by buffer tube 13 or groove 22 as it moves from position P1 to P2, thereby avoiding excessive strain on the optical fibers in ribbon stack 14.

As shown in Figure 5, two ribbon stacks 14 are disposed in a generally H-shaped ribbon organizer 30. A binder or water swellable yarn 38 may be stranded around the organizer 30 to retain ribbon the stacks 14 in stack receiving areas 34 and 35 of the ribbon organizer 30. Water blocking material 15 is applied generally all around the organizer 30 thereby supporting it in the tensile window position within the buffer tube 13.

B. Analysis

Claims 1, 2, 7, 15-17, 19-22 and 26 are rejected under 35 U.S.C. § 102(b) as being anticipated by Coleman. Claims 3-6, 8-14, 18, 23-25 and 27-32 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Coleman.

Independent claims 1 and 5 require “at least one cushion member disposed on an outer side surface of the optical fiber ribbon stack.” Further, Applicant has amended independent claim 1 to recite “a buffer tube surrounding the cushion member and the optical fiber ribbon stack, wherein the cushion member is disposed parallel to a central longitudinal axis of the optical fiber ribbon stack to prevent corner fibers of the optical fiber ribbon stack from contacting the buffer tube.” Independent claim 15 has also been amended to require “a buffer tube surrounding the elastic member; and a filler material provided between the optical fiber ribbon stack and the elastic membrane and between the buffer tube and the optical fiber ribbon stack.”

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The Examiner asserts that Coleman discloses all of the features of independent claims 1 and 15 including the claimed cushion member. In particular, the Examiner appears to be taking the position that the claimed cushion member reads on the water blocking material 15 of Coleman. As discussed above, Coleman discloses the water blocking material 15 may be a thixotropic material, or a dry water blocking material comprising a tape or yarn having a mechanical stiffness or viscous consistency which supports ribbon stack 14 in a tensile window position P1 inside the buffer tube 13, but which permits movement of ribbon stack 14 when the cable 10 is subjected to tension. However, Coleman teaches that when the cable experiences tension, the ribbon stack 14 will move radially until it contacts the inner wall of the buffer tube 13 thereby subjecting the corner fibers of ribbon stack to contact stresses resulting in attenuation of the corner fibers (see Fig. 4). Similarly, as shown in Figs. 5 and 6 of Coleman, a binder/yarn (38, 48) is stranded (wrapped helically) around the ribbon stack(s) such that binder/yarn does not prevent corner fibers of the ribbon stack from contacting the buffer tube when the cable is flexed.

Accordingly, Applicant respectfully submits independent claim 1 would not have been anticipated by or rendered obvious in view of Coleman because the cited reference does not teach or suggest “at least one cushion member disposed on an outer side surface of the optical fiber ribbon stack..., wherein the cushion member is disposed parallel to a central longitudinal axis of the optical fiber ribbon stack to prevent corner fibers of the optical fiber ribbon stack from contacting the buffer tube”, as claimed.

With regards to independent claim 15, the Examiner contends that the claimed elastic member reads on the buffer tube 13 of Coleman. However, Applicant respectfully submits that

the buffer tube 13 cannot correspond to the claimed elastic member, since claim 15 recites “a buffer tube surrounding the elastic member; and a filler material provided between the optical fiber ribbon stack and the elastic membrane and between the buffer tube and the optical fiber ribbon stack.” Accordingly, Applicant respectfully submits the claimed invention would not have been anticipated by or rendered obvious in view of Coleman because does not teach or suggest “an elastic membrane surrounding the optical fiber stack and the cushion member”, as claimed.

With regards to dependent claims 3-6, 8-14, 18, 23-25 and 27-32, the Examiner concedes that Coleman does not disclose “the shape of the cushion member, the cushion member made into a number of pieces instead of being integral, material of the cushion member so as to exhibit a specific modulus of elasticity and its form as a tape wrapped around the ribbon stack”. However, the Examiner takes “[o]fficial notice ... that such features are well known in the art of optical fibers.”

Applicant respectfully submits the Examiner has not to establish a *prima facie* case of obviousness with regards to the § 103 rejection of dependent claims 3-6, 8-14, 18, 23-25 and 27-32. In particular, the characterization of certain limitations or parameters as obvious does not make the claimed invention, considered as a whole, obvious. It is incumbent upon the Examiner to establish a factual basis to support the legal conclusion of obviousness. *In re Fine*, 837 F.2d 1071, 5 U.S.P.Q.2d 1596 (Fed. Cir. 1988). This burden can only be satisfied by an objective teaching in the prior art or by cogent reasoning that the knowledge is available to one of ordinary skill in the art. See *In re Lahu*, (747 F.2d 703, 223 U.S.P.Q. 1257 (Fed. Cir. 1984)). Furthermore, an Examiner

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may not rely on official or judicial notice at the exact point where patentable novelty is argued, but must come forward with pertinent prior art. See *Ex parte Cady*, 148 U.S.P.Q. 162 (Pat. Off. Bd. App. and Inter. 1965).

Further, Applicant respectfully submits the Examiner's assertion that "[t]he instant invention does not provide any reasons or specific problem to be solved by providing these features [of claims 3-6, 8-14, 18, 23-25 and 27-32]" is without merit since the specification repeatedly points out that these features recited in the dependent claims are provided to protect the corner fibers of a ribbon stack from excessive stresses in order to improve overall performance and load carrying capacity.

Accordingly, Applicant respectfully submits that claims 1 and 3-32 should be allowable because Coleman does not teach or suggest all of the features of the claims, and one of ordinary skill in the art would not have been motivated to modify the teachings of Coleman to produce the claimed invention.

III. Conclusion

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

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The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,



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